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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,370	02/28/2002	Kazuyuki Imamura	020208	6291

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EXAMINER	
ARBES, CARL J	

ART UNIT	PAPER NUMBER
3729	6

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,370	IMAMURA ET AL.	
	Examiner	Art Unit	
	C. J. Arbes	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for R ply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Applicants' response to the Office's Restriction (which was mailed on or about 18 November 2003) has been duly noted. The Office finds that the Restriction has been carefully reviewed and found to be proper and accurate. In view of this finding and further in view of Applicants' response thereto the Restriction is hereby **made Final**. Applicants are required to cancel all non-elected claims or take other appropriate action. An Office Action on the merits of Claims 1-11 follows.

Claims 2 and 8-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There appears to be a dichotomy between the range of per cents of metal grains in the metal paste which Applicants claim and the range of meat grains which Sakuyama et al teach. That is at the bottom of Column 9 in Sakuyama et al. there is a statement that a metal paste which contains less than 30 vol. % metal grains tends to provide a difficult electrical connection between the electrodes. It appears that in the instant application Applicants are using the metal grains for substantially the same purpose as what Sakuyama et al teaches and yet are claiming a ratio of between more than 1 and less than 20 vol %. It is far from clear how the values in the instant application will enable one to practice the invention claimed when it is expressly taught that these values do not work.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuyama et al..(Pat No 6,670,264 B2)

Sakuyama et al teach a method of mounting an electronic part (Cf. element 110 , 210 and the like) onto a mounting substrate (Cf. element 120, 220 and the like) by means of fusion to join connection terminals (e.g. 121, 221 and the like) . Metal paste (or flux paste) (Cf. e.g. elements 140, 340. The metal paste contains a metal. The metal paste has a thickness so as to form a space between the electronic part and the substrate. A heat treatment is carried out to seal a resin is a pace formed between the electronic part and the mounting substrate. The metal contained in the metal paste i.e. Sn-Ag powder had an average grain size of 13 microns (Cf. Col 15). If it is held that the electrodes are inherently not greater than the diameters of the metal grains then it would have been obvious to provide such grain sizes of the metal powder in order to properly bond the electrodes of the component to the substrate. As applied to Claim 2 there is a dichotomy between this application and the prior art reference to Sakuyama et al inasmuch as in e.g. the bottom of Column 9 of Sakuyama et al if one uses a proportion of metal grains in the metal paste of less than 30% (Vol) Sayuyama et al teach that "it is difficult to establish electrical connection between the electrodes..."

Any inquiry concerning this communication should be directed to C. J. Arbes at telephone number (703)308-1857.

CJA

CARL J. ARBES
PRIMARY EXAMINER